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ABSTRACT

The term "curriculum" is ambiguous in that it is used to name a field of phenomena, a fund of knowledge about that field, a kind of knowledge within that fund, and the set of rules by which the fund is substantiated. This paper suggests that to relieve this ambiguity it is necessary to develop an appropriate set of terms with strict applications. "Educology" is proposed as a term meaning "the fund of knowledge about education." The term "curriculum" would be restricted to representing one aspect of the broader field called "education" and would relate particularly to arrangements made for teaching and studying. The fund of knowledge about curriculum could then be identified by the term "educology of curriculum." This fund of knowledge can be investigated in terms of the ways in which curriculum and education in general are related: conceptually, historically, legally, scientifically, praxiologically, normatively, and politically. The fund of knowledge can also be categorized in terms of the kinds of knowledge that can be distinguished in the field: analytical, normative, and empirical. (PGD)

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The Educology of Curriculum

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ABSTRACT

The Educology of Curriculum

Many studies of curriculum become muddled because of category mistakes (inclusion of something in a class of objects which does not fit). What is needed is a system of conception which averts such mistakes. Some concepts that are critical for this system are: (1) Field of phenomena (a set of objects, events, processes, relations, and/or practices); (2) Fund of knowledge (a system of true sentences which describes or characterizes a field of phenomena); (3) Kind of knowledge (a set of true sentences that are substantiated by use of the same set of rules, logical operations, and procedures); (4) Discipline of inquiry (the set of rules, logical operations, and procedures that is used in substantiating a fund of knowledge about a field of phenomena). The term 'curriculum' malfunctions in that it is used to name a field of phenomena, a fund of knowledge, a kind of knowledge, and a discipline of inquiry. Moves that are useful in resolving the conflation are: (1) To sort out the five common usage meanings of 'education'; (2) To select the most useful of those five conceptions in order to identify the field of phenomena to be studied; (3) To sort out the basic components, the derivative components, and the basic processes of education; (4) To sort out the fund and the kinds of knowledge about education that are possible; (5) To name the fund of knowledge about education 'educology' rather than 'curriculum inquiry', 'curriculum studies', 'curriculum theory', or 'curriculum'. (6) To conceive curriculum as an aspect or feature of the field of educational phenomena; and (7) To relate educology to curriculum as a system of sentences about an aspect of a field of phenomena. Relationships between curriculum and education can be characterized with respect to: conceptual relations (characterized by analytic philosophical educology); past relations (characterized by historical educology), legal relations (characterized by jurisprudential educology), existing relations (characterized by scientific educology); effective relations (characterized by praxiological educology); good or right relations (characterized by normative philosophical educology); and effective political praxis for effective relations (characterized by political praxiological educology). This system of conception can be used to guide inquiry and extend knowledge about curriculum. Using this system, a researcher, developer, or teacher of curriculum regards education as a field of phenomena. Its basic components are teachers, students, something being taught and studied, and something for the teaching and studying. Curriculum is an aspect of the field; it relates most closely to arrangements made for teaching and studying. Educology is the fund of knowledge about the field of educational phenomena. The educology of curriculum is the fund of knowledge (generalizations, characterizations) about an aspect of the field of educational phenomena. The fund can be categorized with respect to the aspects or features of the field that it characterizes. The resultant divisions are analytic philosophical, historical, jurisprudential, scientific, praxiological, normative philosophical, and political praxiological educology. The fund can also be categorized with respect to kinds of knowledge. The resultant divisions are analytic, normative, and empirical educology of curriculum. Use of this conceptual system reduces the risk of muddle and conflation in construction of knowledge claims about curriculum.

THE PROBLEM. The question addressed here is that of *What can be done to clear up the confusion caused by ambiguity in discourse about curriculum*. This problem is treated by identifying some techniques and distinctions that are critical to developing a clear system of conception about education. These techniques and distinctions are then applied to the development of a system of conception which (i) relates curriculum to education and (ii) identifies different categories of knowledge that can and need to be established about education and curriculum.

THE CONTEXT OF THE PROBLEM. Many studies of curriculum become muddled because of category mistakes. They include in their studies things which do not belong or fit. Such mistakes arise from equivocal conceptions of curriculum and unclear thinking about what set of phenomena is named by the term 'curriculum'. Moreover, many researchers who undertake to study curriculum either dodge the question of what they are naming with the term 'curriculum' or they mishandle the question by using inappropriate techniques for devising solutions to the problem. There are many examples of this, and two will suffice to illustrate the point.

A work which side-steps the question of *What is curriculum* is John McNeil's *Curriculum: A Comprehensive Introduction*.¹ A work which mishandles the question is Hugh Sockett's *Designing the Curriculum*.² McNeil's work sets forth contrasting viewpoints of (i) what should be taught to whom, (ii) when, (iii) how, and (iv) why, but never is the question of *What is curriculum* directly addressed: a curious thing for a work intended to be a comprehensive introduction to curriculum. In contrast, Sockett's work does address the question, but mishandles it by not using appropriate rules of definition, functions of definition, and techniques of concept analysis and evaluation. As a result, the mistaken conclusion is drawn that

there could be no one answer [to the question of what is curriculum], for what we take a curriculum to be will depend on our educational priorities and principles. Every definition of a curriculum will rest on a proposal about education. Thus, as you pick up books on curriculum, you will find that a writer will set out what he takes a curriculum to be. Consider the varieties: for some a curriculum *is* the activities that children experience as learners in a school, while for others it is a plan or programme of those activities. . . . there is a distinction between the activities which learners undergo under the purposeful direction of teachers and the whole gamut of things a child might do in a school, either of which might be called a curriculum. When you say, therefore, that this is what a curriculum is, you are simply stipulating a definition: you are saying, in effect, that for my purposes I will take a curriculum to be this. For you cannot say what it *is*.³

This treatment of the question is inadequate on several grounds. It asserts that all definitions function stipulatively, but the research of conceptual analysis has established that definitions can be made to function in at least two other ways: programmatically and reportively.⁴ It does not make it clear that the call for *What is* β is usually a call

for a reportive definition of common usage (or usages).⁵ It does not report clearly common usage definitions of curriculum; nor lay out such definitions in established forms (e.g., in synonymy form, classificatory form, equivalent expression form),⁶ nor clarify the implications of those common usage definitions by means of established techniques of conceptual analysis (e.g., explication technique, model case technique, contrary case technique, borderline case technique, invented case technique, related concept technique, unrelated concept technique, word substitution technique, social context technique, underlying anxieties technique, practical consequences technique, results in language technique).⁷ After clarification of the common usage concepts of 'curriculum' is achieved to an adequate degree, then an educational researcher (or inquirer) is in a position to evaluate the set of concepts in terms of relevant criteria (e.g., in terms of exclusiveness, exhaustiveness, external relatedness, inclusiveness, internal consistency, fruitfulness).⁸ At that point, the researcher is in a position to make a rational choice among the common usage meanings. And if none of the common usage meanings are appropriate, then the inquirer is justified in stipulating a meaning which suitably characterizes and identifies the field of phenomena which he/she intends to study. Once the researcher has made an adequate clarification, a careful evaluation, and a choice of an appropriate conception of 'curriculum', then the field of phenomena named by that chosen conception of 'curriculum' is curriculum. Contrary to Sockett's assertion, it is entirely possible to say what curriculum is, and it is desirable to say what it is, if researchers are to characterize it adequately.

However, as matters stand, persons who lay claim to be doing work with curriculum (either as researchers, designers, developers, evaluators, implementers, or teachers of curriculum), are permitting the term 'curriculum' to malfunction in their work and discourse. They lay aside the necessary conceptual analysis and evaluation because (i) they do not appreciate that it is necessary, or (ii) they do not know how to do it, or (iii) both. Adequate work with curriculum requires, along with other skills, the knowledge of how to do conceptual analysis and evaluation. But it does not stop there. A consideration of some other important matters is necessary in order to make sense out of discourse about curriculum.

CRITICAL CATEGORIES. Improvement in the quality and utility of work with curriculum requires attention to at least five critical categories: (i) field of phenomena, (ii) discipline of inquiry, (iii) fund of knowledge, (iv) kind of knowledge, and (v) system of knowledge.

(i) **FIELD OF PHENOMENA.** A field of phenomena is a set of occurrences, happenings, behaviours, practices, events, policies, relations. The field of phenomena which is named by 'education' includes events such as teachers teaching, students studying, curriculum being arranged for teaching and studying, and settings influencing the acts of teaching and studying. These events and activities are not the same as discourse about them. Of course, if the discourse and characterization about education are to be accurate and useful, they must be related to educational phenomena, but sentences about educational phenomena are not the same as the phenomena themselves.

FIELD OF EDUCATION	=	FIELD OF EDUCATIONAL PHENOMENA	=	FIELD OF PHENOMENA IN EDUCATION	=	PRACTICES, ACTIVITIES, EVENTS, POLICIES, RELATIONS IN THE PROCESS OF TEACHING AND STUDYING SOMETHING IN SOME SETTING
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(ii) *DISCIPLINE OF INQUIRY*. It is the business of educational researchers and inquirers to construct language, in the sense of sets of sentences, which adequately characterizes educational phenomena. In their work, the researchers must take care. They must follow appropriate rules of proof, logical operations, and procedures so that the characterizations which they construct are justified. The set of rules, operations, and procedures which they follow in substantiating knowledge claims about educational phenomena constitute their discipline.

DISCIPLINE OF EDUCATIONAL INQUIRY	=	DISCIPLINE OF KNOWLEDGE ABOUT EDUCATION	=	SETS OF RULES, LOGICAL OPERATIONS AND PROCEDURES WHICH ARE FOLLOWED TO SUBSTANTIATE KNOWLEDGE CLAIMS ABOUT EDUCATION
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(iii) *FUND OF KNOWLEDGE*. As more and more characterizations of education are substantiated, a set of true statements is gradually built up into a fund of knowledge about educational phenomena. This fund can be used to describe, explain, and predict that which occurs in the field of educational phenomena.

FUND OF KNOWLEDGE ABOUT EDUCATION	=	SET OF TRUE STATEMENTS WHICH ADEQUATELY CHARACTERIZE THE PROCESS OF EDUCATION
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Language which adequately characterizes education is knowledge about education, and terms which are candidates for naming this fund of knowledge include 'pedagogy', 'ethology', and 'educology'. 'Pedagogy' has been in use since the eighteenth century, and the term derives from the Greek term, '*paides*', meaning 'children'. The concept of pedagogy relates closely to the idea of knowledge about the education of children. Hence, it is too narrow in its conception to include knowledge about all levels, functions, and forms of education. A second candidate, 'ethology', was proposed by J.S. Mill in the nineteenth century (*Systems of Logic*, 1846, Book VI, Chapter V, Paragraph 4). Mill was concerned about the problem of explaining how different nations developed distinct national characters and how the process of mass character functioned. 'Ethology' derives from the Greek term '*ethos*', meaning 'character of a group'. The concept of ethology relates to knowledge about the character development of societies and nations. It implies knowledge about all learning, whether deliberate, guided, unintentional, unguided, or adventitious. Thus, the concept of 'ethology' is too broad for the term to be used to mean, and only mean, 'knowledge about education'. A third candidate yet remains. The term 'educology' derives from 'education', meaning 'the process of someone guiding and someone else being guided in undertaking to learn something in some setting'. The concept of educology means, and only means, 'knowledge about education'.

'Educology', then, functions much like the terms 'sociology', 'psychology', and 'anthropology'. Each names a fund of knowledge about some field of phenomena.

The term 'educology' and its conception originated from the work of several scholars in Europe, North America, and Australia. Professor Elizabeth Steiner³ of Indiana University, Bloomington, first used the term in a presentation to the Philosophy of Education Society (U.S.A.): "Logic of Education and Educatology: Dimensions of Philosophy of Education," *Proceedings of the Twentieth Annual Conference of the Philosophy of Education Society*, Lawrence, Kansas, 1964. Although she originally used the term, 'educatology', in response to criticism at the P.E.S., she shortened the term to 'educology'. Her subsequent work in explicating the concept of educology included: "Towards Educational Theorizing Without Mistake," *Studies in Philosophy and Education*, 7 (1970), 154-7; "Philosophy of Education as Philosophy of Educational Science," *Viewpoint*, 47 (1971), 1-8; "The Non-Identity of Philosophy and Theory of Education," in John Martin Rich's *Readings in Philosophy of Education*, 2nd Edition, (Belmont, California: Wadsworth Publishing Co., 1972), 360-371.

Although unknown to Steiner, her usage of the term 'educology' had come thirteen years after its original introduction into the literature about education. Professor Lowry W. Harding of Ohio State University (Columbus, Ohio) had used the term as early as 1951. In fact, Harding had published four books using the term, and he played the role of principal figure in a loosely formed organization which he named, "The Association for the Study of Educology," at Ohio State University. To qualify for membership, one had to contribute a witty story or a joke that related to education. The four books were: *Anthology in Educology* (Dubuque, Iowa: Wm. C. Brown, Co., 1951); *Essays in Educology* (Dubuque, Iowa: Wm. C. Brown, Co., 1956); *More Essays in Educology* (Columbus, Ohio: Association for the Study of Educology, 1964); *Educology: The Fourth Collection* (Columbus, Ohio: Association for the Study of Educology, 1965). In all of these works, Harding treated educology as a joke, a format for witty anecdotes about education, although there was the occasional suggestion that underneath the wit, Harding was serious about the idea of developing a fund of knowledge about education and naming it educology. The books were of limited edition. They were never intended to be widely distributed, and consequently, knowledge of them was confined largely to Harding's students and friends.

In contrast to Harding, Steiner was unequivocally serious in her writings on educology. She had coined the term independently of Harding and without knowledge of his treatment of the term. Moreover, her conception of educology related explicitly to problems of how to conduct inquiry about education in a disciplined manner and of how to substantiate knowledge claims about education.

Others who worked independently of Steiner included Professor John Biggs of Newcastle University, Professor Rachel Elder of Pepperdine University (Los Angeles, California), Professor Wolfgang Brezinka, of Konstanz University (Konstanz, Germany), and Professor Anton Monshouwer of

the Institute of Philosophy and History of Education, University of Nijmegen (Nijmegen, The Netherlands).

Biggs used the term in a paper presented to the Annual Conference of the South Pacific Association for Teacher Education (Macquarie University, 1975): "Professional Development or Practice." He also used the term in a subsequent article: "Educology: The Theory of Educational Practice," *Contemporary Educational Psychology*, 1 (1976), 274-284. Elder had coined the term in the late 1960's and used it in a paper written for Far West Laboratory for Educational Research and Development (San Francisco): "Three Educologies" (mimeographed, 1971). Brezinka explicated the concept of educology in his book *Metatheorie der Erziehung* (Munich: Ernst Reinhardt, Publisher, 1978). Monshouer has used the concept of educology in the treatment of what constitutes scientific knowledge about education.

Stimulated by Steiner's work with the concept of educology, several scholars have worked on extending the conception and applying it in the construction of solutions to educational problems. Persons engaged in this work have included James E. Fisher, William E. Eaton, George Maccia, Gregory J. Pozovich, Jerome A. Popp, John Martin Rich, Diana Buell Hiatt, Richard Snow, Russell Ames, Kenneth Strike, Edmund Short, John Walton, Charles M. Reigeluth, M. David Merrill, Marian Reinhart, and David E. Denton.

Fisher and Christensen's work has included co-authorship of "The Logical Structure of Educational Studies (Educology) as an Organization for Curriculum and Administration in Colleges of Education," a paper presented to the Annual Conference of the American Educational Studies Association (New York City, 1974); "Educational Research as Educology," *Australian Educational Researcher*, 2:4 (1975), 18-20; "A 'Knowledgeable' Approach to Organizing a College of Education," *Resources in Education*, 12:2 (1977), 178; "A Conversation about Education as Educology," *Educational Studies*, 8:1 (1977), v-xii; "An Organizational Theory for Schools of Teacher Education and Faculties of Education," *Australian Journal of Education*, 22:1 (1978), 52-71; "The Liberal Uses of Educology," a paper presented to the Annual Conference of the American Educational Studies Association (Cincinnati, Ohio, 1979); *Analytic Philosophy of Education as a Subdiscipline of Educology: An Introduction to its Techniques and Applications* (Washington, D.C.: University Press of America, 1979).

In 1975, Professor Fisher organized a symposium at the Annual Conference of the American Educational Studies Association which addressed the question of whether the American Educational Studies Association should change its name to the American Educology Association. Papers included in this symposium were: "The History of the Term, 'Educology'," by William E. Eaton and Gregory J. Pozovich of Southern Illinois University (Carbondale, Illinois); "Considerations for Naming a Professional Association," by Professor Jerome A. Popp of Southern Illinois University (Edwardsville, Illinois); "Educology and the Categories of Educational Studies," by Professor Fisher.

Two years later, in 1977, Professor John Martin Rich presented a paper to a joint meeting of the Society for Professors of Education and the Philosophy of Education Society (entitled "The Moral Domains of the Edu-

cation Professoriate") in which a criticism was made of Professor Steiner's conception of educology and a delineation was made of the moral dimensions for doing educological inquiry. Also, in 1977, at the Annual Meeting of the American Educational Research Association in New York City, a symposium was held on the question of "Whither or Wither Educology." Professor George Maccia of Indiana University (Bloomington) was the chairman, and the papers which addressed the question included: "Educology: Its Origin and Future," by Professor Elizabeth Steiner; "Educology and Educational Theory Construction," by Professor Richard E. Snow, Stanford University, Palo Alto, California; "The Relevance of Educology for Educational Practice," by Professor Russell Ames, Purdue University, West Lafayette, Indiana; "Educology and Educational Policy Making," by Professor Kenneth Strike of Cornell University, Ithaca, New York.

The work in educology continues with Professor Elizabeth Steiner's soon to be published book, *Educology of the Free*, and her *Logical and Conceptual Analytic Techniques for Educational Researchers* (Washington, D.C.: University Press of America, 1978). In addition, *Perspectives on Education as Educology*, edited by J.E. Christensen, is due for publication in the near future.

The point of going into the origins of the use of the term, 'educology', is to show that it does have a history of usage, and there is a fund of literature that has emanated from it. But this is not sufficient justification for its use. The justification for using a new term relates to the way that existing terms function and malfunction. Malfunctions in language occur when a term implies more than one meaning simultaneously. When ordinary usage of a term functions ambiguously, or when it fails to name a needed concept, then creation of new terms is justifiable. This is the case with educology. A term is needed to name the fund of knowledge about education. 'Pedagogy' is unsuitable because it is too narrow and exclusive in its implication. 'Ethology' is not appropriate because it is too broad and inclusive in its meaning. 'Education' is inappropriate because it is ambiguous. It simultaneously names a field of phenomena and the fund of knowledge about that field. 'Educology' names nothing more, nor less, than that fund. Of all the candidates, it is the most appropriate name for knowledge about education.

(iv) *KIND OF KNOWLEDGE*. Statements can be distinguished with respect to the standards that are used to judge the truth value of the statements. Verification of different kinds of statements requires the use of different sets of rules, logical operations, and procedures. At least three kinds of true statements are distinguishable (analytic, empirical, normative), and all three kinds can be made about the field of educational phenomena.¹⁰ Kinds of true statements, or kinds of knowledge, relate closely to discipline of inquiry. Inquiry can be classified with respect to whether it is directed toward amassing evidence to support analytic, empirical, or normative knowledge claims. For the inquiry, or research, to be adequate, the discipline of the inquiry must be consistent with the kind of statement that it is intended to substantiate. The fund of knowledge that is educology does not imply a single standard for judging the truth value of knowledge claims about education (e.g., the standards relating to empirical claims). Rather, since educology includes all three kinds of knowledge, it requires the use of the disciplines necessary for analytic, empirical, and normative inquiry.

(v) *SYSTEM OF KNOWLEDGE*. Knowledge arranged with respect to the field of phenomena that it characterizes, as is sociology, educology, or anthropology, can be distinguished from systems of knowledge. Knowledge arranged in a system permits generalization: The greater the coherency of a system of knowledge, the higher the level of generalizations that are possible. Physics, that body of knowledge so often pointed to as an example of a system of knowledge, is a set of statements with a high degree of coherency (and thus, system). Yet even this popular paradigm of systematic knowledge is not entirely systematic. The set of sentences which relate magnetic forces, electrical forces, and atomic forces, have not yet been arranged such that the set of sentences can relate gravitational forces to the other three. The point being made here is there are degrees of systemization, and even those categories of knowledge (i.e., sets of true statements) with a high degree of systemization (such as physics and chemistry) are not entirely systematized. Systemization of knowledge is, of course, highly desirable, for it permits ever wider generalizations and ever wider accurate predictions. Yet systemization does not constitute a discipline. And this brings us back to the point at which the discussion of system began: Systemization of knowledge is distinct from discipline of knowledge. Systemization relates to the arrangement of sets of true statements into a coherent order. Discipline of knowledge relates to the standards requisite for judging the truth value of knowledge claims. The presence (or absence) of system in a body or fund of knowledge (such as educology) has a direct bearing upon the utility of the knowledge: The higher the degree of system, the greater the utility. Yet the presence (or absence) of system in a fund of knowledge has no bearing on its truth value. The discipline of a fund of knowledge, however, does, for it is the discipline (or standards) which must be used in order to determine whether a set of statements do constitute knowledge (i.e., are true).

CURRICULUM AND THE CRITICAL CATEGORIES. An examination of the use of the term 'curriculum' shows that researchers and curriculum developers permit it to malfunction. They use it to name a field of phenomena, a fund of knowledge, a kind of knowledge, and a discipline of inquiry. It is used to mean all things to all people, and terms of that sort consequently lose their efficacy to make any distinction at all.

POSSIBLE MOVES FOR RESOLUTION OF AMBIGUITY. It is patent that the term 'curriculum' requires clarification so that curriculum researchers and developers and teachers of curriculum can accurately and usefully characterize the field of phenomena that is curriculum. Much of what is written and said about curriculum is done in such away as to conflate curriculum with education. The two terms are often used in the literature as if they were synonyms. Several moves are possible and useful in sorting out the conflation and subsequent confusion. They include:

1. sorting out the five common usage meanings of the term 'education';
2. selecting the most useful and appropriate of those five conceptions in order to identify the field of phenomena to be studied;
3. sorting out the basic components, the derivative components, and the basic processes of education;

4. sorting out the fund and the kinds of knowledge about education that are possible;
5. naming the fund of knowledge about education 'educology' rather than 'curriculum studies', 'curriculum inquiry', 'curriculum theory', or 'curriculum';
6. conceiving curriculum as an aspect or feature of the field of educational phenomena;
7. relating educology to curriculum as a system of sentences about an aspect of a field of phenomena.

1. *FIVE COMMON USAGE MEANINGS OF THE TERM 'EDUCATION'*. Common usage meanings of terms are the meanings that people actually establish for terms by using the terms in some social and linguistic context. Five common usage meanings of 'education' can be identified in ordinary discourse. For example, it is a commonplace occurrence for a teacher to say

My profession is education.

In the sentence, the term substitution of 'teaching' for 'education' could be made without changing the meaning of the sentence:

My profession [teaching].

The fact that there is no change in meaning indicates that in the context of this sentence, 'teaching' and 'education' are equivalent in meaning. One common usage meaning of the term 'education', then, is teaching.

Now, consider Thomas Hughes' comment on the education of an Englishman.

Life isn't all beer and skittles; but beer and skittles, or something better of the same sort, must form a good part of every Englishman's education. (From *Tom Brown's Schooldays*, 1857, Pt. I, Ch. 2)

If 'education' is substituted by the term 'teaching' in this statement, it still makes sense, but a more suitable substitution recommends itself. Put 'learning' in the place of 'education', and the meaning of the statement remains closer to the original.

. . . beer and skittles . . . must form a good part of every Englishman's [learning].

From this substitution, a second common usage meaning of the term 'education' becomes apparent: learning.

However, the term 'learning', itself, has two senses. One conception of learning relates to the steps that a person goes through, his trials and errors, mistakes and successes. in coming to know something or to

do something well. A second conception of learning relates to the outcome of having gone through the steps. It is the realized ability to do something well, the knowing, or the understanding. Learning in the first sense implies the *process* of coming to know. Learning in the second sense implies the *product* of the process, i.e., the knowing, the understanding, the performing.

So, to say that a common usage meaning of education is learning requires us to consider which sense of learning: learning₁ (the process of coming to know) or learning₂ (knowing, knowledgeability, competence). The technique of term substitution shows that it is both senses of learning that are implied, depending upon the context. This is illustrated, for example, in the sentences,

1. Nothing in education is so astonishing as the amount of ignorance it accumulates in the form of inert facts. (Henry Brooks Adams, *The Education of Henry Adams*, 1907, Chapter 25)
2. It is only the ignorant who despise education. (Publilius Syrus [translated by Darius Lyman], ca. 50 B.C., *Maxim* 571)

The sense of learning implied by 'education' in the first sentence is the process of coming to know (learning₁):

1. Nothing in [the process of coming to know] is so astonishing as the amount of ignorance it accumulates in the form of inert facts.

The sense of learning implied by 'education' in the second sentence is the product of having come to know (learning₂):

2. It is only the ignorant who despise [knowing, knowledgeability, competence].

Two other common usages are distinguishable. Sometimes 'education' is used to mean the combination of guiding someone in the process of his/her learning and that someone deliberately undertaking to be guided in his/her learning. In this usage, 'education' is made to mean the combination of teaching and trying to learn (studying under guidance). This fourth sense of education is implied, for example, in the famous American judicial proclamation:

To separate black children from others of similar age and qualifications solely because of their race generates a feeling of inferiority as to their status in the community that may affect their hearts and minds in a way unlikely ever to be undone. . . . We conclude that in the field of public education the doctrine of "separate but equal" has no place.

Separate educational facilities are inherently unequal. (Earl Warren, Chief Justice of the Supreme Court of the U.S., *Brown v. Board of Education of Topeka*, 347 U.S. 483, 1954.

The sense of education that is implied is that of the combination of teaching and studying:

We conclude in the field of public [teaching and studying] the doctrine of "separate but equal" has no place.

The fifth sense of education that is established in common usage is that of knowledge about the process of teaching and studying. For example in universities we find units named "School of Education," or "Faculty of Education." And people are awarded degrees and diplomas in education. In the sentence,

Mr. Gamma holds a Ph.D. in education,

the following substitution can be made without changing the meaning:

Mr. Gamma holds a Ph.D. in [knowledge about teaching and studying].

The expression, 'books in education', is another example of the usage of 'education' in this sense. Books in education are not books in teaching and studying. Rather, they are books in knowledge about teaching and studying. In its fifth sense, the term 'education' is made to perform in much the same way as the terms 'sociology', 'anthropology', and 'psychology'. Its usage names a fund of knowledge about a field of phenomena.

2. *SELECTION OF ONE OF THE CONCEPTS TO IDENTIFY A FIELD OF PHENOMENA.* From common usage, there are four possible concepts of 'education' from which a choice could be made to identify a field of phenomena for study and inquiry. The candidates are

EDUCATION₁ = LEARNING₁ = THE PROCESS OF COMING TO KNOW
EDUCATION₂ = LEARNING₂ = KNOWING (THE PRODUCT OF LEARNING)
EDUCATION₃ = TEACHING = INTENDING TO CAUSE SOMEONE TO LEARN
EDUCATION₄ = TEACHING AND STUDYING

The fifth sense of 'education' is not a candidate because it does not name a field of phenomena. Rather, it names a fund of knowledge. The argument that the fund is better named 'educology' has already been presented.

The question, then, is *Which concept of 'education' ought we use in careful, disciplined discourse about educational phenomena?* An adequate solution to this problem requires that each of the four concepts be evaluated with respect to a set of appropriate criteria. The criteria which recommend themselves as an appropriate set are: inclusiveness, internal consistency, exhaustiveness, exclusiveness, external relatedness, and fruitfulness.

(i) *Inclusiveness*. This criterion is used to determine whether a conception of education is sufficiently broad enough to include all of the cases and instances of educational phenomena that are related to each other in essential ways.

(ii) *Internal consistency*. This criterion is used to judge whether a conception of education includes the necessary and sufficient distinguishing characteristics of an educational transaction, so that all cases or instances that are identified as educational are consistent and clearly related to each other in essential ways.

(iii) *Exhaustiveness*. This criterion relates closely to that of inclusiveness. It is used to judge whether a concept of education permits every instance or case that should count as a member of the field of educational phenomena to be counted, or whether there are some cases which are left out and which should be included.

(iv) *Exclusiveness*. This criterion is used to judge whether a concept of education excludes all of the cases or instances which ought to be excluded from the field of educational phenomena.

(v) *External relatedness*. This criterion is used to judge whether a conception of education is sufficiently related to other concepts (such as schooling, studying, learning, teaching, curriculum, and knowledge) to be useful in discourse about educational phenomena.

(vi) *Fruitfulness*. This criterion is used to judge whether the conception of education is generally useful in permitting unambiguous and clear discourse about educational phenomena and whether it promotes progress in developing and extending descriptions, characterizations, explanations, and predictions of educational phenomena.

An evaluation of education₁ (education as learning₁, or the process of coming to know) in relation to the six criteria reveals some serious anomalies. Education is an achievement concept. It includes successful instances, only, of coming to know, and it excludes unsuccessful tries at coming to know. Also, it includes instances of coming to know in which no one tries, but nevertheless learns something; the learning is adventurous, or accidental, or it is the result of manipulation, propagandizing or conditioning. Moreover, education₁ excludes teaching from the field of educational phenomena, altogether. The conception, then, is too broad, too inclusive in some cases; and it is too narrow, too exclusive in other cases. If this conception were used to determine which phenomena were to be counted as educational phenomena and which were not, the activities of trying to learn (studying) and of trying to help someone to learn (teaching) could be discounted from the field or realm of educational phenomena. A concept which makes such exclusions as does education₁ has serious limitations and deficiencies in guiding inquiry and research, and it would produce a very limited range of discourse.

An evaluation of education₂ (education as learning₂, or the product of coming to know, or knowing) in relation to the six criteria also reveals some difficulties. Education₂ excludes the process of coming to know from instances that would count as belonging to the field of edu-

cational phenomena. It also excludes teaching from the field. A concept which excludes the process of coming to know, the activity of teaching, and the process of trying to learn from the field or realm of educational phenomena is too exclusive in its implication. It would lead, again, to an extremely limited range of inquiry and discourse.

An evaluation of education₃ (education as teaching) shows that it, also, is too narrow in its implication. It includes only the activity of teaching in the range of phenomena that would count as educational phenomena. It excludes coming to know (learning₁) and trying to come to know (studying).

The remaining candidate from common usage is education₄, or teaching/studying something in any setting. With regard to inclusiveness, this conception counts

- (1) unsuccessful attempts to learn under guidance
- (2) successful attempts to learn under guidance
- (3) unsuccessful attempts to help someone to learn, and
- (4) successful attempts to help someone to learn

as members or instances of the field of educational phenomena. Education₄ excludes

- (1) learning which is unintentional and unguided (learning_{1α})
- (2) learning which is intentional and unguided (learning_{1β})
- (3) learning which is unintentional and guided (learning_{1γ})

from the field of educational phenomena. Thus, the concept of education₄ includes enough and no more than enough, and it excludes enough and no more than enough. The exclusion of the three categories of learning (ie. learning_{1α}, learning_{1β}, learning_{1γ}) is advantageous from the point of view of being able to distinguish the process of education from

- (1) random events, accidents (learning_{1α})
- (2) research, inquiry, trial and error (learning_{1β})
- (3) conditioning, manipulating, indoctrinating, propagandizing, proselytizing (learning_{1γ})

Although distinct from important concepts such as knowledge, research and the process of learning, education₄ has an external relatedness to them. Education₄ also connects closely with the concepts of enculturation, socialization, and schooling.

Some might argue that the concept of schooling is the one that ought to be used to determine the limits of the field of educational phenomena. However, the concept of schooling is too exclusive in its implication; it discounts instances of education which occur outside of the setting of schools. Schooling implies institutionalized teaching and studying, while education implies all teaching and studying, institutionalized and otherwise. Thus education₄ is a broad enough concept to facilitate and extend discourse about education that occurs within the family, church, youth organizations, adult groups, clubs, factories, farms, businesses; or between friends, workmates, casual acquaintances, relatives; as well

as within nursery schools, kindergartens, secondary and primary schools, colleges, universities, academies, and institutes. The concept of schooling would confine the discourse to discussions and characterizations of schools, academies, colleges, or universities.

Education, then, as a concept to be used in determining the limits and range of the field of educational phenomena, provides the necessary and sufficient conceptual power to

- (1) include all that belongs to the field of educational phenomena (and thus meeting the criterion of appropriate inclusion);
- (2) exclude all that does not belong to the field of educational phenomena (and thus meeting the criterion of appropriate exclusion);
- (3) connect all that belongs to the field of educational phenomena through a system of internal coherency (and thus meeting the criterion of internal consistency);
- (4) exhaust the possibilities of instances that could be counted as part of the field of educational phenomena (and thus meeting the criterion of exhaustiveness);
- (5) relate the field of educational phenomena to other phenomena outside of the field (e.g., enculturation, socialization) and thus meeting the criterion of external relatedness; and
- (6) establish a fruitful basis for extending careful disciplined discourse about educational phenomena (and thus meeting the criterion of fruitfulness).

Therefore, in relation to the six criteria for evaluation of a suitable conception of education to use in inquiry about education, the concept of education, is the most appropriate one, and it is the one that ought to be followed in determining the limits and range of the field of educational phenomena.

3. *THE BASIC COMPONENTS, DERIVATIVE COMPONENTS, AND BASIC PROCESSES OF EDUCATION.* The components of something are the parts which constitute it, and the basic components are those parts which are fundamental to something being what it is. Education, in the sense of teaching and studying, has four basic components. If any one of the four is missing, then education can not take place. The four are: teacher, student, content, and setting.

(i) *Teacher.* Anyone who attempts to help someone to learn something in some setting is a teacher. It does not matter whether the person who tries to help does things that do not help, with respect to deciding whether he is a teacher. He still is a teacher as long as he is acting with the intention to help, or cause, someone to learn something. A person does not have to hold a position within a school, college, or uni-

versity to be a teacher. Each of us plays many roles in our day-to-day lives, e.g., friend, parent, son or daughter, brother or sister, customer, employee; and one of the roles is teacher. Thus, a teacher is, at times, a mother or father, an aunt or uncle, a friend or acquaintance, a policeman, shop clerk, physician, or bartender. A teacher is always a persons, not a machine, book, chart, film projector, or someother physical object. The role of teacher is universal. It exists in all cultures and societies. It is one of the distinctive features of mankind.

(ii) *Student*. Anyone who deliberately tries to learn something under the guidance of someone else is a student. Sometimes a student may try to learn, but fails. This does not disqualify him as a student, for as long as he or she tries to learn, successfully or otherwise, that person is a student. It is not necessary that a person be enrolled in a school or college, university or academy, to be a student. A person can be a student in a train station, taxi cab, on a street corner, in a business, or in a family. A student is, at times, a friend, relative, postman, airline pilot, soldier, architect, adult, or child. In our day-to-day existence, among the many roles that each of us assumes from time to time is that of student: We want to know something, and we place ourselves in the guidance of someone so that we might learn. The role of student exists universally in all societies and cultures.

(iii) *Content*. The something that is taught and studied is the content. The content is knowledge, or that which is taken to be knowledge, and it is usually arranged for the purposes of teaching and studying. The content may be the knowledge of how to roller skate or how to tie shoelaces. It may be the knowledge of Australian history or sociology or physics. It may be the knowledge that making people suffer is bad or that honesty is the best policy. It may be the knowledge of how to make valid inferences or how to inquire effectively. It may be the knowledge of how to gain people's confidence or how to persuade them to buy a car. Other possible names for the content are subject matter, skills, attitudes, adequate performances, disciplines, techniques, methodologies, procedures. The content is a selection from all that is available from a culture, or cultures. Two persons, one acting as teacher and the other acting as student, transact with each other in relation to a content (a selection from the culture) with the intention of extending the student's knowing (i.e., extending his realized ability to perform effectively) in relation to the content. A person, acting as student, directs his activities towards developing his pre-conventional knowing into conventional knowing in relation to the knowledge that is the content.

(iv) *Setting*. Education takes place as an integral part of a society and a culture. Those who teach and study are members of that society and culture. The content is a selection from that culture. The culture includes, among other features, the customs, beliefs, laws, economic and political systems, language usages, and religious systems of a society. The set of relations among the culture and the three components of teacher, student, and content constitute the setting of education. We could characterize the setting in terms of cultural setting of education, and this would be characterizing it in the broadest and most inclusive terms possible. Or we could characterize the setting in more selective and exclusive terms. Thus, for example, the setting of education could

be characterized in terms of only its political setting, or only its religious setting, or its economic setting, its historical setting, its administrative setting, or its institutional setting. The setting places the limits on the extent and range of teacher and student performances and content selections.

A process is the functioning of a set of parts in a pattern of relationships. The functioning of teacher and student in relation to some content and some setting constitutes the basic processes of education, viz., teaching and studying.

(i) *Teaching*. Any activity which is intended to help someone else learn something counts as teaching. Paradoxically, this sometimes includes withholding action, as well. The feature of intentionality is what distinguishes activities which count as teaching from activities in general. Teaching is not merely doing something from which someone else learns, however. Always, intentionality must be present. For example, a person may observe his friend drive a car, and from that set of observations learn the basics of operating a car. So, was the friend who did the driving, teaching? It depends upon whether he was driving with the intention that his friend develop an understanding of how to drive. If so he was teaching. If not he was merely driving, and nothing more. The example illustrates the nature of teaching as an intentional activity. It also illustrates that teaching is not only done by a school teacher in a classroom. It can occur in a house, with one's family; on the job, with one's work mates; in a restaurant, with one's friends. The range of activities which might count as teaching is broad and extensive. Some examples will suggest just how broad. A preschool teacher, arranging a set of toys early one morning with the intention that, after they arrive the children will have practice in socializing with each other and developing a sense of cooperation and sharing is teaching. A farmer showing his hired hand how to operate a cream separator is teaching. A musician listening to a pianist play, with the intention of recommending ways to improve technical and interpretational aspects of the pianist's recital, is teaching. A senior pilot riding along and observing a junior pilot do practice flights is teaching, if he/she is doing the observation with the intention of identifying any errors and recommending ways in which the trainee could improve his flying. It is the peculiar nature of the process of teaching that you can not determine whether a person is teaching by merely observing the performance or conduct of the person. You must also know his intention. Teaching is deliberately performing in ways that are intended to help a person learn something in some setting.

There are two other senses of teaching which arise in common usage, and they deserve some explanation and relating to teaching as intentionally trying to cause learning. They will be distinguished with subscripts. Teaching₁ is the sense of teaching which has just been distinguished. Teaching₂ is intentionally causing learning, and teaching₃ is causing learning.

TEACHING₁ = INTENTIONALLY TRYING TO CAUSE LEARNING
TEACHING₂ = INTENTIONALLY CAUSING LEARNING
TEACHING₃ = CAUSING LEARNING

An example of teaching₂ is an older sister showing a younger brother how to fly a kite and the brother practicing until he knows how to operate the kite by himself. Teaching₁ allows the distinction between effective and ineffective teaching performances. Teaching₂ does not. Only effective performances count as instances of teaching₂. Another way to regard teaching₂ is to conceive of it as effective teaching₁. The conception of teaching as teaching₂ is implied in a statement such as,

If the children don't learn from a lesson then what the teacher was doing doesn't deserve to be called teaching,

or the statement,

I am waiting for the day to come when it is impossible for us to say that we have been teaching if our students have not learned from our teaching.

An example of teaching₃ is someone finding out that eating peanuts makes them break out in hives. One could say,

The experience of eating peanuts was teaching him to avoid peanuts in his diet.

This third sense of teaching includes unintentional activities, and it removes a person who is offering guidance from the scene altogether. It is close in meaning to the concept of learning_{1a}, coming to know unguided and unintentionally.

Of the three common usage conceptions, teaching₁ is the most appropriate for furthering disciplined discourse and unambiguous, useful knowledge about education. Teaching₂ makes the distinction between effective and ineffective teaching impossible because it functions as an achievement concept -- only effective performances, ones which cause learning, count as teaching. Thus, teaching₂ is too narrow in its implication. It excludes instances of behavior that should be considered in relation to helping someone learn something. Teaching₃ is too broad in its conception. It includes events and circumstances in which there is no person acting as teacher, and it blurs the distinction between teaching and studying. The concept of teaching₁ is the one among the three which makes the essential distinctions that are necessary to facilitate and extend useful, disciplined discourse about the field of educational phenomena.

(ii) *Studying (studenting)*. Teaching makes sense only in relation to the process of studying under guidance. At least two common usages of the term 'studying' are distinguishable. One implies undertaking to learn something under the guidance of someone else. A second sense implies undertaking to substantiate new knowledge claims, without guidance. A person studying in the first sense works under the guidance of a teacher, and his/her aim is to master knowledge and conventions that have already been established. A person studying in the second sense is working independently of a teacher, and he/she is aiming to add to the existing fund of knowledge and conventions. One way to distinguish between the two senses of study is to coin a term that can be used in place of the first sense of study. One that is appropriate is the term

'studenting'.¹²

STUDENTING = STUDYING₁ = INTENTIONALLY TRYING TO LEARN
SOMETHING UNDER GUIDANCE

Studenting is a task concept. It implies trying to learn, and it includes both the successful and the unsuccessful attempts. In contrast, learning (learning₁) is an achievement concept. It implies only successful attempts at coming to know. Thus, deliberate, guided learning (learning_{1δ}) is a subset of studenting. Any activity which is directed toward intentionally learning something under the guidance of someone counts as studenting. Thus studenting can take place in schools or universities, colleges or institutes, but it can also occur in homes and churches, clubs and social gatherings, sporting events and parties. Examples of studenting include someone practicing bidding hands in Contract Bridge in relation to someone else explaining a bidding system; a young person working on perfecting his playing of a piece on the guitar in relation to the direction and suggestions of another, more experienced guitarist; an adult watching a demonstration of how to upholster furniture and intending to re-upholster some of his old furniture; a young woman reading about marriage customs of traditional societies in West Africa in relation to the guidance offered to her by a teacher of anthropology. It can not be determined by observation alone whether a person is engaged in studenting. The intention of the person must also be known. Reading a book, sewing, listening to an explanation, kicking a football, are nothing more than that, if the person performing the activity is not doing it with the intention to learn *and* not doing it in relation to someone else who has offered, or is in the act of offering guidance. Thus, in order that a person's activities count as performances of studenting, one must

- (1) intend to learn something, and
- (2) consciously and willingly place himself into a relationship of being guided in his activities by someone.

These are the bare essentials of studenting.

The distinctions of being *in* an experience and being *of* an experience relate to the process of studenting. A person can be placed into circumstances in which someone else chooses to teach him. He is thereby *in* an experience. But if he/she chooses not to try, not to attend to the matters at hand, and not to learn, then he is only *in* the experience. He is not *of* the experience. Someone is teaching, but he is not studenting; and the process of education is not existent. Should he choose to intend to learn, to accept guidance, to attend to matters at hand, then he is both *in* the experience and *of* the experience. He is studenting. There is no guarantee, of course, that the studenting will be effective. One may try and still not learn. Studenting is transactive with teaching, not reactive.

The metaphors of "passing on" and "transference" have been used in the literature about education to characterize the relationship of teaching to studenting, but the characterizations are inaccurate. In a transference, something changes location. A person receives a transfer, and he moves from location "A" to location "B"; "A" is vacant, and "B" is oc-

cupied. Money is transferred from one bank to another; the account in the first bank is diminished, and in the second bank, augmented. But in education, if studenting and teaching are effective, the functioning of the student develops a greater degree of adequacy and control, but the teacher's functioning is not diminished as a consequent. In the development of the student's knowing, the teacher loses none of his own knowing; and the knowledge recorded in the content is not diminished in any way. Thus, transference is an inadequate characterization of the processes of teaching and studenting. They are not processes of transference of passing on, but rather, of transaction: a development of adequate functioning in relation to existing adequate functioning, without diminishing the original functioning. Education is a transactive process that is made up of the basic processes of teaching and studenting.

Teacher, student, content, and setting are the basic components of education, and teaching and studenting are its basic processes. In addition, a set of components that are derivative of the basic set are usually present in educational transactions. These include methods, aids, styles, and language used in teaching and studenting.

(i) *Methods*. Methods are procedures that are followed in an activity. Procedures relate to ordering or arranging behavior into sets of patterns. Examples of teaching methods include demonstrating, leading discussions, asking questions, listening attentively, observing carefully, giving directions, assigning practice, etc. There are methods of studenting as well as teaching. These are procedures of ordering or arranging one's behavior in playing the role of student. At times, the methods of studenting are identical to those of teaching, and at times, they are different. Examples include attentive listening, reading, demonstrating, practicing, answering questions, asking questions, participating in discussions, leading discussions, observing carefully. Methods may be distinguished with respect to whether they are effective or ineffective; extant or nonexistent; and good or bad.

(ii) *Styles*. Styles of teaching and studenting are the manner in which a method is used or executed. Terms which characterize manner include supportive, friendly, aloof, sarcastic, patient, abrupt, jaded, enthusiastic, concerned, nervous, stern, mocking, cruel. Styles relate closely to personality, and both student and teacher manifest styles in their methods. An identical method can be executed in different styles. The method of asking questions can be employed using a warm, supportive style, or an aloof, abrupt style. Like methods, styles may be distinguished with respect to effectiveness or ineffectiveness; existence or nonexistence; and worthwhileness or worthlessness.

(iii) *Aids*. Aids are the physical objects that are used in studenting and teaching. The range of objects that could be used is extensive, and examples include pens, paper, films, books, desks, balls, engines, tools, shoes, cameras, playing fields, and the like. Aids may be distinguished as effective or ineffective; extant or nonexistent; and bad or good.

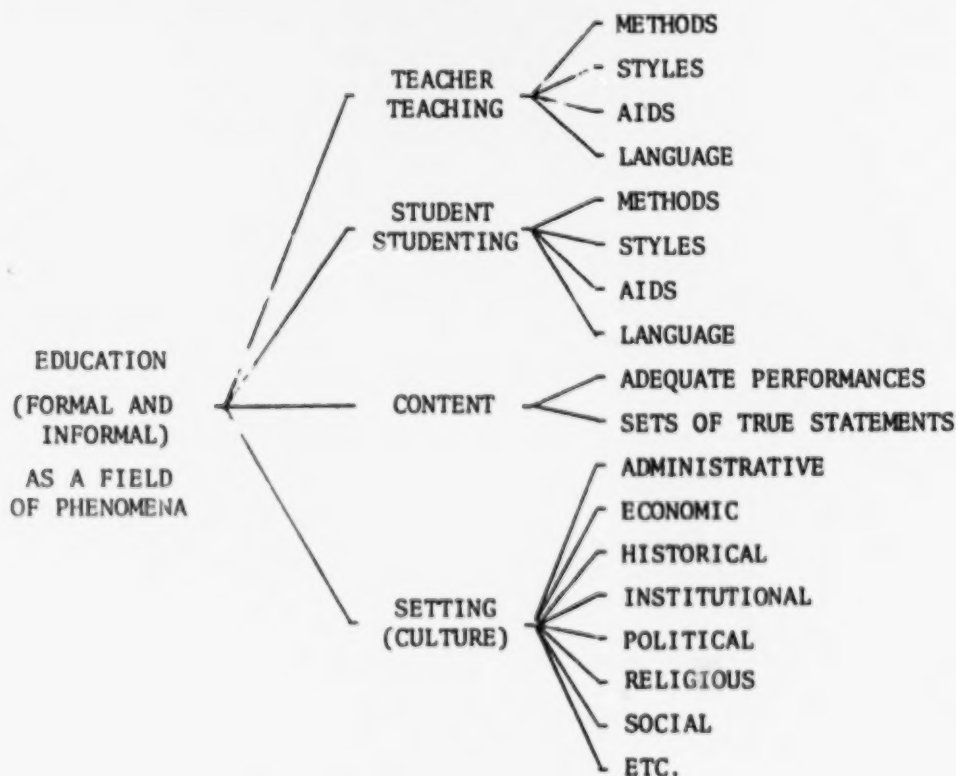
(iv) *Language*. The processes of teaching and studenting require language in order for educational transactions to occur. In educational

transactions, the language assumes characteristic forms, and it performs characteristic functions. The functions include

describing
explaining
relating
questioning
directing
defining
illustrating
evaluating

The forms of language characteristic of educational transactions divide into ordinary and specialized. Ordinary language is that of everyday conversations. Specialized language occurs as systems, or realms, of discourse. For example, history, chemistry, auto mechanics, and accountancy constitute four separate realms of discourse, each with a distinctive set of concepts, descriptions, and explanatory principles.

The total picture of education in terms of its basic components and processes, and its derivative components is



4. *THE FUND AND THE KINDS OF KNOWLEDGE ABOUT EDUCATION.* The distinction between a field of phenomena and a fund of knowledge about a field has already been discussed. And an argument has been advanced to

justify the practice of using the term 'education' to name a field and the term 'educology' to name the fund about that field. Educology implies at least three kinds of knowledge about education: empirical, analytic, and normative. These distinctions are made with respect to the standard of verification. Empirical knowledge (in the sense of true statements) is the set of statements which is verified by observing actual events, or aspects of a field of phenomena, and determining whether the events, or aspects, match the statement. Empirical statements about education can be further distinguished into at least two categories with respect to aspects of the field of phenomena to which the statements refer. One category is about existing educational phenomena. A second is about effective educational practices. The first consists of generalizations about extant aspects, features, and relationships of the teaching and studenting process. The second consists of generalizations about educational praxis -- that which we should do and refrain from doing in order to get the results that we want in the teaching and studenting process. The first category of empirical educology can be called scientific, and the second, praxiological.

'Praxiology' means 'knowledge about effective practices, procedures, or methods for doing something'. Praxiology includes the concept of technology, and it also implies all propositional knowledge about how to achieve desired results which are other than a physical object (e.g. maintaining mental health, effectively arguing a legal case, or intentionally causing learning).

Scientific knowledge about education is the science of education, or scientific educology. It is true generalizations about existing states of affairs in the field of educational phenomena. It relates closely to questions such as:

1. How do different teaching methods affect learning?
2. What functions do grading and assessment systems perform in educational institutions?

Praxiological knowledge about education is the praxiology of education, or praxiological educology. It is true generalizations about effective practice in the field of educational phenomena. It relates closely to questions such as:

1. What teaching methods are effective for getting pupils of ages 9 to 10 to understand division?
2. What procedures work in eliminating misconduct in the classroom?

Both sets of knowledge count as part of educology. Both require the use of the same discipline to substantiate their knowledge claims, i.e., both require the set of rules, logical operations, and procedures demanded by empirical knowledge. The two bodies of knowledge differ with respect to the feature or aspect of educational phenomena about which they generalize.

The effective practices which praxiological educology describes and characterizes are not intrinsically good. For example, educologists may

find that malicious and cruel treatment are effective in causing someone to learn something. Yet the effectiveness of these treatments would not be sufficient justification to use them as educational practices. This leads to another category of statements about education: those concerning the intrinsic goodness and badness of goals, practices, policies, or behaviors in the teaching and studenting process. Such statements are normative. Examples are:

1. Teachers should not victimize their students.
2. Intellectual development should be the primary goal of secondary education.

We form an agreement with a normative statement by establishing some set of criteria to which we are willing to commit ourselves, or to live by. And we observe whether behavior, practices, or events conform to the criteria. Statements verified by this process constitute normative knowledge, and the discipline which forms this knowledge is the set of rules, logical operations, and procedures demanded by normative inquiry (sometimes called evaluative research).¹² Normative knowledge about education is true generalizations about intrinsically good states of affairs in the field of educational phenomena. Other names for this normative knowledge are normative philosophy of education, and normative philosophical educology.

A third way in which we can verify statements is by determining whether they are consistent with other statements. We examine the meaning (i.e., the necessary implications) of a statement in relation to a set of other statements and reason whether they are necessarily consistent. A statement that is treated in this way can be called analytic. Examples are:

1. Education implies teaching and studying.
2. The result of effective teaching is learning.

Analytic inquiry, if successful, produces true analytic statements (i.e. analytic knowledge).

In summary, at least three categories of knowledge about education can be distinguished with respect to standards of verification (or discipline): analytic, normative, and empirical. 'Discipline' in this context is taken to mean the set of rules, logical operations, and procedures required for substantiating knowledge claims. Analytic inquiry requires the use of one set; normative, a second set; and empirical, a third. The discipline required to produce educology includes at least analytic, normative, and empirical discipline.

Another possible name for analytic knowledge about education is 'analytic educology', and analytic educology implies at least three categories: analytic philosophy of education, history of education, and jurisprudence of education. All three are subfunds of knowledge about education that are verifiable by necessity reasoning, and the kind of evidence that counts is the implication of language. All three require the same discipline, but they differ with respect to the feature or aspect of ed-

educational phenomena about which they generalize. Analytic philosophy of education describes and explains the implications of concepts and propositions in the language of education. History of education describes and explains the implications of language about past educational phenomena. And the jurisprudence of education describes and explains the necessary implications of legal language which guides and regulates persons in the teaching and studenting process.

Normative knowledge about education is normative educology, or normative philosophy of education. Often the term 'philosophy of education' is used without distinguishing between analytic and normative philosophy. This usage conflates different kinds of knowledge. Analytic philosophy of education requires the use of necessity reasoning (deduction), and the knowledge which is analytic philosophy of education describes and characterizes the necessary implications of concepts and sentences used in the language of education. That knowledge that is normative philosophy of education requires the use of evaluative reasoning for its verification, and it describes and characterizes aims, practices, and/or policies which have worth in education. The theorizing of Dewey, Bayles, and Butler, for example, counts as normative philosophy of education.¹³ The theorizing of Ryle, Scheffler, Smith, and Gribble is analytic philosophy of education.¹⁴

The concept of 'language of education' functions ambiguously. It can mean (i) 'language which occurs within the process of teaching and studenting', and (ii) 'language which is about the process of teaching and studenting'. In its first sense, language of education means language in education. In its second sense, it means language about education. What a person says while engaged in the role of teaching, or in the role of studenting, are examples of language of education in the first sense; and educology, or true generalizations about the field of educational phenomena, is an example of language of education in the second sense.

Given this distinction between two senses of language of education, a third meaning of philosophy of education is possible to discern. Language about education can be an object of inquiry. It can be analyzed, and true statements about it can be substantiated. This set of true statements constitutes a fund of knowledge about educology (rather than about education). It is the logic and epistemology of substantiating statements about the educational process. In common usage, this fund could be named 'philosophy of education', because in common usage, 'education' is a term that names (i) the teaching and studenting process and (ii) knowledge about that process. But a name that more adequately characterizes the fund is 'philosophy of *educology*'.¹⁵ The substitution of 'educology' for 'education' in the name 'philosophy of education' clarifies that the object of knowledge is language about education.

In summation, three meanings of 'philosophy of education' are:

- (i) analytic philosophy of education, or knowledge about meanings of concepts and propositions in educational language;
- (ii) normative philosophy of education, or knowledge about

worthwhile aims, policies, and behaviors in the educational process;

- (iii) philosophy of educology, or knowledge about rules, logical operations, and procedures for substantiating knowledge claims about the field of educational phenomena.

The first two are subfunds of educology. The third is knowledge about educology. It is meta-educology.¹⁶

'Science of education' and 'scientific educology' are names for a subfund of knowledge about education that has two distinguishing characteristics: (i) It is about extant aspects of the field of educational phenomena, and (ii) the set of statements of which it consists are verifiable by some means of observation.

In one sense, scientific educology includes the psychology of education, sociology of education, anthropology of education, economics of education, political science of education, and physiology of education. In another sense, it does not. For example, the term 'sociology' names knowledge about society, and the term 'sociology of education' is made to function ambiguously. At times, it is used to mean 'knowledge about the effects of education upon society'. At other times, it is used to mean 'knowledge about the effects of society upon education'. Knowledge which treats society as the dependent variable and which characterizes the effects of other factors upon society is sociology. Knowledge which treats education as the dependent variable and which characterizes the effects of other factors upon education is educology. The first sense of the term 'sociology of education' implies a subfund of sociology. The second sense of 'sociology of education' implies a subfund of educology, and a better name for this second sense is 'educology of society'. The same argument holds for terms such as 'psychology of education', 'economics of education', 'anthropology of education'. Where they are intended to mean knowledge about the effects of something upon education, they are better named the

educology of mental processes,
educology of economic systems,
educology of cultural processes.

The concept of 'educology of' extends to any object of knowledge that is an aspect of the field of educational phenomena. Thus, the

educology of reading,
educology of religious education,
educology of educational leadership, and
educology of curriculum,

are all conceivable.

Some people maintain that the terms 'educational psychology' and 'sociology of education' name disciplines.¹⁷ It seems to make more sense to regard them as names for funds of knowledge which are not educology at

all, in one sense, and as subfunds of educology, in a second sense. And in the second sense, the subfunds imply the use of all three standards of verification (i.e., disciplines): viz., the standards requisite for empirical, analytic, and normative knowledge claims.

One red herring that keeps popping up is that educology is not a discipline in its own right.¹⁸ Rather, so the argument goes, it borrows from other disciplines such as sociology, psychology, and economics. It is a red herring because sociology, psychology, and educology imply use of the same standards for judging the truth value of knowledge claims. An empirical knowledge claim remains empirical, regardless of whether it is about society, and thus an empirical sociological claim, about mental processes, and thus an empirical psychological claim, or about education, and thus an empirical educological claim. A distinction can be made between sociology and educology, of course, but it is in relation to the object of knowledge (i.e., the field of phenomena about which generalizations are made), not the discipline of knowledge (i.e., the rules, logical operations, and procedures for making knowledge claims).

Notwithstanding the implication that if 'sociology', 'anthropology', and 'economics' are terms which name all knowledge about society, mankind, and economic systems, some researchers insist upon restricting the use of terms such as 'sociology' so that they name only scientific knowledge. How do the implications of the concept of 'scientific educology' or 'science of education' relate to these restricted usages? In the case of 'sociology of education' naming only scientific knowledge of the effects of society upon the educational process, then sociology of education is a subfund of scientific educology. In the case of 'sociology of education' naming only scientific knowledge about the effects of the educational process upon society, then sociology of education is a subfund of sociology and not part of educology, scientific or otherwise. So, scientific educology does imply the subfunds of sociology of education, anthropology of education, economics of education, and psychology of education, where these terms are intended to mean only scientific knowledge, and where the educational process is characterized as the dependent variable. In the case where these terms do name subfunds of scientific educology, then their meanings are unchanged with the following term substitutions:

psychology of education	= scientific educology of mental processes
sociology of education	= scientific educology of society
economics of education	= scientific educology of economic systems
political science of education	= scientific educology of political systems
anthropology of education	= scientific educology of cultural processes

While the five categories just enumerated as subfunds of scientific educology differ with respect to the aspect or feature of the field of edu-

cational phenomena about which they generalize, they all require the use of the same discipline, i.e., they require the use of the same rules, logical operations, and procedures of empirical inquiry.

Thus far, two major subfunds of empirical educology have been distinguished: scientific and praxiological. A third is possible, and it can be named the 'political praxiology of education'. Effective practices for teaching and studenting differ from effective practices in the governance, management, and administration of the teaching and studenting process. In order for a teaching practice to be judged effective, it must attain understanding of what is being taught prior to attaining acceptance of the content that is being taught. Effective administrative practices for education do not necessarily have to meet the condition of understanding prior to the condition of acceptance. An administrative practice is politically sound even if understanding of the policy, rule, regulation, or procedure is not achieved, but acceptance is achieved. For example, if a State department of education wishes to introduce a new music curriculum into the school systems, gaining acceptance by the teachers and students for the new curriculum, without achieving their understanding of the justification for the new curriculum, would still count as effective administration, from a political point of view. Knowledge about how to get teachers, students, and others to accept innovations in education and to accept existing regulations and policies constitutes the praxiology of political practices for education. The expression, 'praxiology of political practices for education' means the same as 'praxiology of the politics of education', and it means the same as 'political praxiology of education'. These terms name the knowledge (i.e., the true generalizations) about what to do in order to gain acceptance of policies to regulate teaching and studenting. It is a third subfund of empirical educology. It is not a separate discipline from science of education and from praxiology of education because the knowledge of which it consists requires the use of the same rules, logical operations, and procedures of empirical inquiry. It differs from the other two subfunds only with respect to the feature of the field of educational phenomena that it characterizes.

The concept of educology, in the sense of true statements about the teaching and studenting process, thus implies three kinds of knowledge (analytic, normative, and empirical) and the use of three sets of rules, logical operations, and procedures (those appropriate for analytic, empirical, and normative inquiry). The discipline of educology is the three sets, and each of the sets can be regarded as a subdiscipline of the entire master set of the discipline that is appropriate for substantiating educology. Each subdiscipline can be used to produce subsets of funds of knowledge that are part of the fund that is educology. The subdiscipline of analytic inquiry can be used to produce the subfunds of historical, analytic philosophical, and jurisprudential educology. The subdiscipline of normative inquiry can be used to produce the subfund of normative philosophical educology. And the subdiscipline of empirical inquiry can be used to produce the subfunds of scientific, praxiological, and political praxiological educology. The knowledge of appropriate and effective research methodologies for producing knowledge about education is knowledge about educology. It is meta-educology.

Subfunds of meta-educology

1. Philosophy of educology

Subfunds of educology

1. Analytic educology
 - 1.1. Analytic philosophical educology
(Analytic philosophy of education)
 - 1.2. Historical educology
(History of education)
 - 1.3. Jurisprudential educology
(Jurisprudence of education)
2. Normative educology
 - 2.1. Normative philosophical educology
(Normative philosophy of education)
3. Empirical educology
 - 3.1. Praxiological educology
(Praxiology of education)
 - 3.2. Political praxiological educology
(Political praxiology of education)
 - 3.3. Scientific educology
(Science of education)

The differences that distinguish subfunds of knowledge about education can be clarified by examples. Suppose that we wish to conduct inquiry and establish knowledge about mathematics curricula. Curriculum is an aspect or feature of the field of educational phenomena, and different kinds of questions can be posed about this aspect:

(i) The question, "what mathematics curricula are currently being used in schools," implies the use of the discipline of empirical inquiry to answer it. The set of true generalizations which constitute an adequate answer implies the subfund of scientific educology. It is an empirical question, and its answer is located in, or is part of, the science of education (or scientific educology).

(ii) The question, "what mathematics curricula are effective in promoting learning," implies the use of the discipline of empirical inquiry to answer it. The set of true generalizations which constitutes an adequate answer implies the subfund of knowledge named praxiological educology. It is an empirical question, and its answer is located in the praxiology of education.

(iii) The question, "what should we do in order to get teachers, students, and parents to accept a new mathematics curriculum in the school program," implies the use of the discipline of empirical inquiry to answer it. The set of true generalizations which constitutes an adequate answer implies the subfund of knowledge named political praxiological educology. It is an empirical question, and its answer is located in the political praxiology of education.

(iv) The question, "what mathematics curricula have been used in the past," implies the use of the discipline of analytic inquiry to answer it. The set of true generalizations which constitutes an adequate

answer implies the subfund of knowledge named historical educology. It is an analytic question, and its answer is located in the history of education.

(v) The question, "what mathematics curricula are permissible in law," implies the use of the discipline of analytic inquiry to answer it. The set of true generalizations which constitutes an adequate answer implies the subfund of knowledge named jurisprudential educology. It is an analytic question, and its answer is located in the jurisprudence of education.

(vi) The question, "what is meant by the concept of 'mathematics curriculum'," implies the use of the discipline of analytic inquiry to answer it. The set of true generalizations which constitutes an adequate answer implies the subfund of knowledge named analytic philosophical educology. It is an analytic question, and its answer is located in the analytic philosophy of education.

(vii) The question, "what outcomes should we want from a mathematics curriculum," implies the use of the discipline of normative inquiry to answer it. The set of true generalizations which constitutes an adequate answer implies the subfund of knowledge named normative philosophical educology. It is a normative question, and its answer is located in the normative philosophy of education.

(viii) The question, "how can we know that generalizations about mathematics curricula are true," implies the use of analytic inquiry to answer it. The set of true generalizations which constitutes an adequate answer implies the fund of knowledge named meta-educology. It is an analytic question, and its answer is located outside of educology. Its answer is located in the philosophy of educology.

Conventional discourse about education divides education into categories such as early childhood education, primary education, secondary education, special education, art education, and the like. These categories name aspects or features of the field of educational phenomena about which disciplined inquiry can be conducted and about which knowledge can be formed.

Discipline used to conduct inquiry about teaching and studenting	Fund of knowledge about education	Aspects or features in the field of educational phenomena (objects of knowledge)
Analytic discipline	Educology	Early childhood education
Empirical discipline		Primary education
		Adult education
		Secondary education
Normative discipline		Higher education
		Special education
		Social science education
		Curriculum
		Instruction
		Etc.

The same subdisciplines of educology can be used to conduct research and establish knowledge about any subset of phenomena within the field of educational phenomena. For example, the term 'primary education' in one sense means 'the teaching and studenting process of children of a certain age range'. In a second sense, it means 'knowledge about primary education'. This second meaning is intended when a college or university student says that his/her bachelor's degree or teaching diploma is in primary education. It is equivalent in meaning to the educology of primary education, and it implies the subfunds of:

- historical educology of primary education
- jurisprudential educology of primary education
- analytic philosophical educology of primary education
- normative philosophical educology of primary education
- scientific educology of primary education
- praxiological educology of primary education
- political praxiological educology of primary education

Moreover, it implies the use of the subdisciplines of analytic, normative, and empirical inquiry.

5. *THE FUND OF KNOWLEDGE ABOUT CURRICULUM: IN SEARCH OF AN APPROPRIATE NAME.* The argument has already been advanced that 'educology' is an appropriate name for knowledge about education. The question arises as to what is an appropriate name for knowledge about curriculum. Candidates which exist in usage at the moment are 'curriculum', 'curriculum inquiry', 'curriculum theory', and 'curriculum studies'. In relation to this question, consider for a moment why zoology is not named 'animals'. To do so would be to conflate a field of phenomena (animals) with a fund of knowledge about that field (zoology). Now consider why zoology is not named 'vertebrates'. This would be the conflation of an aspect or feature of a field with the fund of knowledge about the field. Such a conflation does exist in relation to curriculum. The fund of knowledge about curriculum is named by the term 'curriculum'. This is like naming zoology 'vertebrates'. It conflates an aspect (curriculum) of a field (education) with the fund of knowledge about the field (educology). This is why 'curriculum' is an inappropriate name for the fund of knowledge about curriculum. None of the other terms in common usage are appropriate, either. In the case of 'curriculum inquiry', 'inquiry' names an activity, viz., that of conducting research; an activity is not a fund. With 'curriculum studies', 'studies' functions ambiguously; it simultaneously names the activity of conducting research and the activity of undertaking to learn something under the guidance of someone. Neither activity is a fund. 'Curriculum theory' comes closest to the mark, for 'theory' names a fund of a certain kind of statements. But it is too exclusive. A fund of knowledge includes accurate descriptions (facts) and adequate explanations (theories). The problem is resolved by naming the field of phenomena (education), the aspect of the field (curriculum), and the fund of knowledge about the aspect (educology). This is achieved in the term: *educology of curriculum*. It necessarily implies the fund of knowledge about the relationship of curriculum to education.

6. CURRICULUM AS AN ASPECT OR FEATURE OF THE FIELD OF EDUCATIONAL PHENOMENA. An important question to consider is how education as a field of phenomena relates to curriculum as an aspect of that field. The basic components of education are teacher, student, content, and setting. Its constituent processes are teaching and studenting. Four of its derivative components are methods, styles, aids, and language. Where does curriculum fit into the field? An appropriate way to treat this question is to consider what is curriculum, and to consider this question requires some work in definition and conceptual analysis. Defining is laying out in detail the basic rules for using a term and inviting others to follow those rules. It is seeking and offering some set of words that have equivalent meaning to the term being defined.

For example, if you say that curriculum is everything that happens in a school, this is equivalent to saying:

- (i) a possible rule for using the term 'curriculum' is to use it in place of the words 'everything that happens in school';
- (ii) I invite you to use this language rule.

A way of deciding whether you wish to accept this invitation is to consider some of the consequences of following the proposed language rule. Will using the rule (i.e., the definition) enable you to communicate adequately, describe what you want, get others to understand you, create confusion, dumbfound whoever hears you? These are some of the factors to consider.

Although definitions can be made to perform three functions, usually the call for *what is* β is a demand for a common usage definition. You could of course prescribe the way in which you would like everyone to use the term 'curriculum'. This would be making the definition function programmatically. Or you could declare that you will use the term 'curriculum' in a certain way, regardless of how others use the term, and then stick to that usage. Either of these moves might be justified if the common usage meaning was found wanting or deficient. But should you decide that you wish to depart from the common usage meaning of curriculum you need to report how people commonly use the term 'curriculum' in order to evaluate it and identify its deficiencies, if any are existent.

Common usage meanings of terms are reported in dictionaries, so that is an appropriate starting point for a conceptual analysis. One dictionary says that 'curriculum' means the same as 'set course of study'. [*The Australian Pocket Oxford Dictionary*]. A second reports that 'curriculum' means 'the courses offered by an educational institution'. [*Webster's New Collegiate Dictionary*]. A third reports that it means the same as 'the whole range of studies offered in a school, college, etc., or in a type of school'.¹⁹ This is a beginning. Now we need to inquire as to the implications of key terms in the definitions: 'set', 'course', 'study'. Something that is set is something that is assigned. It is something that is deliberately made the responsibility of someone by someone else. The concept of course relates to something that is ordered, planned, sequenced. And the concept of study relates to activity that is deliberately undertaken to achieve the learning of something.

The common sense of these three reported definitions is that 'curriculum' means the same as 'an assigned sequence of activities that are intended to be undertaken to learn something'. The agent which does the assigning is some educational institution, i.e., some organization which intends to engage in teaching and studenting: possibly a school, but the matter is left open ("... a school, college, etc., or in a type of school").

An assigned sequence differs from the assigning of a sequence, and it also differs from performing the assigned sequence. Thus, common usage of the term 'curriculum' follows the rule which says,

Use the term 'curriculum' to point to (denote) an arrangement,

and as corollaries of the main rule,

Don't use 'curriculum' to point to the activity of making the arrangement, and

Don't use the term to point to the activity of executing or implementing the arrangement.

An arrangement is a plan, and a plan in principle takes the form of sentences. It is language. A curriculum, by implication, is the set of sentences which set out the order of activities for undertaking to learn something. In short, curriculum is language which arranges teaching and studenting. It is a plan.

Now we have three choices before us:

- (i) We can choose to adhere to common usage and use 'curriculum' in the sense of a plan for teaching and studenting.
- (ii) We can choose to depart from common usage and prescribe how we would like everyone to use the term.
- (iii) We can say how we choose to use the term idiosyncratically, regardless of what the dictionary says or anyone else says.

Relevant to making the choice are the criteria for evaluating the adequacy of the common usage concept of curriculum. These have been listed and used already in evaluating the five conceptions of 'education': inclusiveness, internal consistency, exhaustiveness, exclusiveness, external relatedness, and fruitfulness. It is distinct from the basic components and processes and the derivative components of education, and yet it is closely related to them to the degree that it is a planned arrangement of them. So curriculum is not teacher, student, content, nor setting; it is not teaching nor studenting; and it is not methods, styles, aids, nor language of teaching and/or studenting. It is the planned, ordered arrangement of those components and processes of education. This is the common usage sense of curriculum, and in terms of the six cri-

teria, the common usage conception is adequate. It is a distinct aspect of the field of educational phenomena. It does not conflate education with curriculum. It does not include too much. It does not exclude too much. It has international consistency. It is exhaustive. It has external relatedness. And it is fruitful: It provides a sound basis for extending useful, clear, and accurate discourse.

7. *RELATIONSHIPS OF EDUCOLOGY TO CURRICULUM.* The argument advanced thus far is that education is a process of teaching and studenting, educology is a fund of knowledge about education, and curriculum is an aspect, or feature of education. The relationship of educology to curriculum, therefore, is the relationship of a fund of knowledge to an aspect of a field of phenomena. It is a relationship like that of zoology to vertebrates.

<u>FUND</u>	<u>FIELD</u>	<u>ASPECT</u>
ZOOLOGY	ANIMALS	VERTEBRATES
EDUCOLOGY	EDUCATION	CURRICULUM

The educology of curriculum is adequate characterizations of the relationships between curriculum and education. These relationships can be characterized using the disciplines of analytic-conceptual, normative, and empirical inquiry. The successful use of these disciplines produces analytic, normative, and empirical educology of curriculum. Relationships between education and curriculum can also be characterized with respect to

- (i) conceptual relations (characterized by analytic philosophical educology);
- (ii) past relations (characterized by historical educology);
- (iii) legal relations (characterized by jurisprudential educology);
- (iv) existing relations (characterized by scientific educology);
- (v) effective relations (characterized by praxiological educology);
- (vi) good or right relations (characterized by normative philosophical educology);
- (vii) effective political praxis for effective relations (characterized by political praxiological educology).

The educology of curriculum, then, implies the subfunds of

- 1. Analytic educology of curriculum
 - 1.1. Analytic philosophical educology of curriculum
 - 1.2. Historical educology of curriculum
 - 1.3. Jurisprudential educology of curriculum

2. Normative educology of curriculum
 - 2.1. Normative philosophical educology of curriculum
3. Empirical educology of curriculum
 - 3.1. Praxiological educology of curriculum
 - 3.2. Scientific educology of curriculum
 - 3.3. Political praxiological educology of curriculum

SUMMARY AND CONCLUSION. The question addressed in this argument has been *What can be done to clear up the confusion caused by ambiguity in discourse about curriculum.* A system of conception, based on common usage, has been explicated and related to the activities of those who develop, conduct research, and teach about curriculum. Critical concepts in the discourse have been those of: field of phenomena, fund of knowledge about a field, aspect of a field of phenomena, and discipline used to produce a fund of knowledge. Using the system of conception that has been set out here, a researcher, developer, and/or teacher would regard education as a field of phenomena. Its basic components are teachers, students, something being taught and studied, and some setting for the teaching and studying. Curriculum is an aspect of the field; it relates most closely to arrangements for something to be taught and studied. Educology is the fund of knowledge about the field of educational phenomena. The educology of curriculum is the fund of knowledge about an aspect of the field of educational phenomena. The fund which is educology of curriculum can be categorized with respect to different relations between curriculum and education that the fund characterizes. The resultant distinctions are analytic philosophical, historical, jurisprudential, normative philosophical, scientific, praxiological, and political praxiological educology of curriculum. The fund that is educology of curriculum can also be categorized with respect to kinds of knowledge. The resultant distinctions are analytic, normative, and empirical educology of curriculum. Use of this conceptual system reduces the risk of muddle and conflation in construction of knowledge claims about curriculum. Use of this conceptual system also requires that curriculum researchers be knowledgeable, skilled, and competent in the rules, logical operations, and procedures appropriate for analytic-conceptual, normative, and empirical inquiry. Appropriate places to develop these competencies are in graduate degree programs in universities and in workshops and seminars at professional meetings of educologists and teachers of educology (i.e., the persons who conduct research to substantiate knowledge about education, and those who teach knowledge about education).

Footnotes

1. Boston: Little, Brown, 1977.
2. Melbourne: The Macmillan Co. of Australia, 1976.
3. p. 22
4. The distinctions among programmatic, reportive, and stipulative functions of definition have been given major attention by Israel Scheffler in *The Language of Education* (Springfield, Illinois: Charles C. Thomas, Co., 1960), Chapters 1-3.
5. An explanation and elaboration of this point is made in Robert H. Ennis, *Logic of Teaching* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1969), Chapter 8.
6. For a further discussion of norms of definition, see Ennis, *Op. Cit.*, pp. 191-243, and J.E. Christensen and J.E. Fisher, *Analytic Philosophy of Education as a Sub-Discipline of Educology: An Introduction to its Techniques and Applications* (Washington, D.C.: University Press of America, 1979), pp. 5, 74-79.
7. For explanation and illustration of these techniques, see Christensen, *Op. Cit.*, Chapter 4.
8. These six criteria are generally recognized and accepted in the philosophy of science as relevant, adequate, and conventional criteria for evaluation of a concept that is to be used to identify a class of phenomena.
9. Prof. Steiner has published many works under the name of Prof. Elizabeth Steiner Maccia (or E.S. Maccia, or E. Steiner Maccia). But she changed her name to Elizabeth Steiner in the late 1970's, and her subsequent work has been authored under the name of Steiner.
10. These three distinctions are explained in detail in Christensen, *Op. Cit.*, pp. 22-33, 39-56.
11. Elizabeth Steiner has used this term in "Educology: Its Origin and Future," a paper presented to the American Educational Research Association, New York, 1977. The use of 'studenting' follows her usage.
12. For an explanation of the discipline of normative inquiry, see, for example, Paul Taylor, *Normative Discourse* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1961).
13. John Dewey, *Democracy and Education*, 1916; Ernest E. Bayles, *Pragmatism in Education*, New York: Harper and Row, 1966; John D. Butler, *Idealism in Education*, New York: Harper and Row, 1966.

14. Gilbert Ryle, *The Concept of Mind*, New York: Barnes and Noble, 1949; Israel Scheffler, *The Language of Education*, Springfield, Ill.: Chas. C. Thomas, 1960; B.O. Smith and R.H. Ennis, *Language and Concepts in Education*, Chicago: Rand McNally and Co., 1961; James Gribble, *Introduction to Philosophy of Education*, Boston: Allyn and Bacon, Inc., 1969.
15. Elizabeth Steiner, "The Non-Identity of Philosophy and Theory of Education," in John Martin Rich's *Readings in Philosophy of Education*, 2nd Edition (Belmont, California: Wadsworth Publishing Co., 1972, pp. 360-371.
16. *Ibid.*
17. See, for example, Jeanne Pietig, "Is Foundations of Education a Discipline?" *Educational Studies*, Volume 6, Number 1/2 (1975), pp. 1-2.
18. *Ibid.*
19. *World Book Dictionary*, (New York: Field Enterprises, 1974).